

Substitute Form PTO-1449
(Modified)U.S. Department of Commerce
Patent and Trademark OfficeAttorney's Docket No.
16459-009001Application No.
10/724,006**Information Disclosure Statement
by Applicant**

(Use several sheets if necessary)

(37 CFR §1.98(b))

Applicant
Alexei A. ErchakFiling Date
November 26, 2003Group Art Unit
2681 2811**U.S. Patent Documents**

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>ON</i>	AA	5,834,331	November 10, 1998	Razeghi			
<i>ON</i>	AB	6,426,515	July 30, 2002	Ishikawa			
<i>ON</i>	AC	2003/0222263	December 4, 2003	Choi			
<i>ON</i>	AD	6,091,085	July 18, 2000	Lester			
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	AQ	
	AR	
	AS	
	AT	

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Date Considered

2/10/05

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Substitute Disclosure Form (PTO-1449)

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 16459-009001	Application No. 10/724,006
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.58(b))		Applicant Alexei A. Erchak	
		Filing Date November 26, 2003	Group Art Unit 2681-2811

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
ON	AA	5,359,345	10/25/94	Hunter et al.			
	AB	5,631,190	05/20/97	Negley et al.			
	AC	5,724,062	03/03/98	Hunter et al.			
	AD	5,799,924	07/14/98	Krames et al.			
	AE	5,955,749	09/21/99	Joannopoulos et al.			
	AF	6,071,795	06/06/00	Cheung et al.			
	AG	6,420,242	07/16/02	Cheung et al.			
	AH	6,559,075	05/06/03	Kelly et al.			
	AI	6,410,942	06/25/02	Thibeault et al.			
	AJ	6,657,236	12/02/03	Thibeault et al.			
	AK	2003/0141507	07/31/03	Krames et al.			
	AL	5,633,527	05/27/1997	Lear			02/06/95
	AM	5,363,009	11/8/1994	Monto			08/10/92
	AN	5,073,041	12/17/1991	Rastani			11/13/90
	AO	5,426,657	06/20/1995	Vakhsoori			05/27/94
	AP	6,091,085	07/18/00	Lester			02/19/98
	AQ	6,469,324	10/22/02	Wang, Tien Yang			
	AR	6,287,882	09/11/01	Chang et al.			
ON	AS	5,793,062	08/11/98	Kish et al.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
ON	AT	WO 98/14986	04/09/98	PCT				

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
ON	AU	W.S. Wong et al. "Damage-free separation of GaN thin films from sapphire substrates", Appl. Phys. Lett. 72 (5), February 2, 1998, pages 599-601

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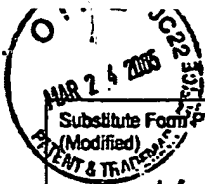
The PTO did not receive the following listed item(s)
 NOT RECEIVED FOR

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 16459-009001	Application No. 10/724,006
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(37 CFR §1.98(b))			

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
ON	AV	M.K. Kelly et al. "Optical process for liftoff of Group III-nitride films", Physica Status Solidi; Rapid Research Note, November 28, 1996, 2 pages.
	AW	A. A. Erchak et al. "Enhanced coupling to vertical radiation using a two-dimensional photonic crystal in a semiconductor light-emitting diode", Appl. Phys. Lett. (78 (5), January 29, 2001, pages 563-565
	AX	P.L. Gourley et al. "Optical properties of two-dimensional photonic lattices fabricated as honeycomb nanostructures in compound semiconductors", Appl. Phys. Lett. 64(6), February 7, 1994, pages 687-689
	AY	P.L. Gourley et al. "Optical Bloch waves in a semiconductor photonic lattice", Appl. Phys. Lett. 60 (22), June 1, 1992, pages 2714-2716
	AZ	J.R. Wendt et al. "Nanofabrication of photonic lattice structures in GaAs/AlGaAs", J.Vac. Sci. Technol. B 11(6), November/December 1993, pages 2637-2640
	AAA	M. Krames et al. "Introduction to the Issue on High-Efficiency Light-Emitting Diodes", IEEE Journal on selected topic in quantum electronics, Vol. 8, No. 2 March/April 2002, pages 185-188
	ABB	K. Streubel et al. "High Brightness AlGaInP Light-Emitting Diodes", IEEE Journal on selected topic in quantum electronics, Vol. 8, No. 2, March/April 2002, pages 321-332
	ACC	M. Okai et al. "Novel method to fabricate corrugation for a $\lambda/4$ -shifted distributed feedback laser using a grating photomask", Appl. Phys. Lett. 55(5), July 31, 1989, pages 415-417
	ADD	T.L. Koch et al. "1.55- μ InGaAsP distributed feedback vapor phase transported buried heterostructure lasers", Appl. Phys. Lett. 47 (1), July 1, 1985, pages 12-14
	AEE	W.T. Tsang et al. "Semiconductor distributed feedback lasers with quantum well or superlattice grating for index or gain-coupled optical feedback", Appl. Phys. Lett. 60 (21), May 25 1992, pages 258-2582
	AFF	M. Zelsmann et al. "Seventy-fold enhancement of light extraction from a defectless photonic crystal made on silicon-on-insulator", Appl. Phys. Lett. 83 (13), September 29, 2003, pages 2542-2544
	AGG	M. Rattier et al. "Omnidirectional and compact guided light extraction from Archimedean photonic lattices", Appl. Phys. Lett. 83 (7), August 18, 2003, pages 1283-1285
	AHH	Y.-J. Lee et al. "A high-extraction-efficiency nanopatterned organic light-emitting diode", Appl. Phys. Lett. 82(21), May 26, 2003, pages 3779-3781
	AII	I. Schnitzer et al. "30% external quantum efficiency from surface textured, thin-film light-emitting diodes", Appl. Phys. Lett. 63 (18), October 18, 1993, pages 2174-2176
	AJJ	M. Boroditsky et al. "Light extraction from optically pumped light-emitting diode by thin-slab photonic crystals", Appl. Phys. Lett. 75 (8), August 23, 1999, pages 1036-1038
	AKK	L. Chen et al. "Fabrication of 50-100 nm Patterned InGaN Blue Light Emitting Heterostructures", Phys. Stat. Sol. (a), 188 (1), 2001, pages 135-138.
	ALL	I. Bulu et al. "Highly directive radiation from sources embedded inside photonic crystals", Appl. Phys. Lett. 83 (16), October 20, 2003, pages 3263-3265
	AMM	T. N. Oder et al. "III-nitride photonic crystals", Appl. Phys. Lett. 83 (6), August 11, 2003, pages 1231-1233
ON	ANN	M.K. Kelly et al. "Optical patterning of GaN films", Appl. Phys. Lett. 68 (12), September 16, 1996, pages 1749-1751

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U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
ON	AA	6,831,302	12/14/04	Erchack et al.			
	AB	6,504,180	1/7/03	Heremans, et al.			
	AC	6,690,268	2/10/04	Schofield, et al.			
	AD	6,642,618	11/4/03	Yagi, et al.			
	AE	6,784,027	8/31/04	Streubel, et al.			
	AF	6,847,057	1/25/05	Gardner, et al.			
	AG	6,072,628	6/6/00	Sarayeddine			
	AH	6,122,103	9/19/00	Perkins, et al.			
	AI	6,288,840	9/11/01	Perkins, et al.			
	AJ	6,574,383	6/3/03	Erchak, et al.			
	AK	5,162,878	11/10/92	Sasagawa, et al.			
	AL	6,828,597	12/07/04	Wegleiter, et al.			
	AM	5,814,839	9/29/98	Hosoba			
	AN	5,491,350	2/13/96	Unno, et al.			
	AO	6,303,405	10/16/01	Yoshida, et al.			
	AP	2002/0110172	8/15/02	Hasnain, Ghulam, et al.			
	AQ	6,222,207	4/24/01	Carter-Coman, et al.			
	AR	6,593,160	7/15/03	Carter-Coman, et al.			
	AS	6,573,537	6/3/03	Steigerwald, et al.			
	AT	6,465,808	10/15/02	Lin			
	AU	2003-0143772	7/31/03	Chen, Tzer-Perng			
	AV	6,762,069	7/13/04	Huang, et al.			
	AW	6,649,437	11/18/03	Yang, et al.			
	AX	6,740,906	5/25/04	Slater, Jr., et al.			
	AY	6,791,119	9/14/04	Slater, Jr., et al.			
	AZ	6,794,684	9/21/04	Slater, Jr., et al.			
ON	AAA	6,825,502	11/30/04	Okazaki, et al.			

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Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office		Attorney's Docket No. 16459-009001	Application No. 10/724,006
	Applicant Alexei A. Erchak			
	Filing Date November 26, 2003		Group Art Unit 2681 2811	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
<i>ON</i>	ABB	2004-0182914	9/23/04	Venugopalan, Hari S.			
<i>ON</i>	ACC	2005-0019971	1/27/05	Slater, David B. Jr.			

Foreign Patent Documents or Published Foreign Patent Applications								
Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation	
							Yes	No
<i>ON</i>	ADD	02/071450 A2		WO				
	AEE							
	AFF							
	AGG							
	AHH							

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
<i>ON</i>	AII	Wendt et al. "Nanofabrication of photonic lattice structures in GaAs/AlGaAs," J. Vac. Sci. Technol. B 11 (6), Nov/Dec 1993, pages 2637-2640
<i>ON</i>	AJJ	Gourley et al. "Optical properties of two-dimensional photonic lattices fabricated as honeycomb nanostructures in compound semiconductors," Appl. Phys. Lett. 64 (6), 7 February 1994, pages 687-689
	AKK	
	ALL	

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(37 CFR 1.98(b))

Applicant
Alexei A. Erchak et al.Filing Date
November 26, 2003Group Art Unit
2681

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
ON	AA	5,132,751	July 21, 1992	Shibata, et al.			
	AB	6,784,463	August, 2004	Camras et al.			
	AC	2004/0043524	March, 2004	Huang et al.			
	AD	5,126,231	June 30, 1992	Levy			
	AE	6,778,746	August 17, 2004	Charlton, et al.			
	AF	6,742,907	June 1, 2004	Funamoto, et al.			
	AG	2004/0110856	June 10, 2004	Young, Jung Gun et al.			
	AH	2004/0144985	July 29, 2004	Zhang, Zhibo, et al.			
	AI	2004/0207319	October 21, 2004	Erchak et al.			
	AJ	2004/0207323	October 21, 2004	Erchak et al.			
	AK	2004-0206962	October 21, 2004	Erchak et al.			
	AL	2004-0206971	October 21, 2004	Erchak et al.			
	AM	2004-0207320	October 21, 2004	Erchak			
	AN	2004-0259279	December 23, 2004	Erchak et al.			
	AO	2004-0259285	December 23, 2004	Erchak et al.			
	AP	2005/0051785	March 10, 2005	Erchak et al.			
	AQ	2005/0051787	March 10, 2005	Erchak et al.			
	AR	2005/0087757	April 28, 2005	Erchak et al.			
	AS	2005-0040424	February 24, 2005	Erchak et al.			
	AT	2005-0059178	March 17, 2005	Erchak et al.			
	AU	2005-0059179	March 17, 2005	Erchak et al.			
	AV	2005-0087754	April 28, 2005	Erchak			
	AW	2005-0127375	June 16, 2005	Erchak et al.			
	AX	3,293,513	August 8, 1962	J.R. Biard et al.			
	AY	3,922,706	November 25, 1975	Kaiser			
	AZ	4,864,370	September 5, 1989	Gaw et al.			
ON	AAA	5,126,231	June 30, 1992	Levy			

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	Applicant Alexei A. Erchak et al.		
	Filing Date November 26, 2003	Group Art Unit 2681 <u>2861</u>	

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
ON	ABB	6,071,795	June 6, 2000	Cheung et al.			
	ACC	6,778,746	August 17, 2004	Charlton, et al.			
	ADD	6,849,558	February 1, 2005	Schaper			
	AEE	6,307,218	October 23, 2001	Steigerwald et al.			
ON	AFF	5,600,483	February 4, 1997	Fan et al.			

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	AGG							
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	AII							
	AJJ							
	AKK							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
ON	ALL	A. Köck et al., "Novel surface emitting GaAs/AlGaAs laser diodes based on surface mode emission," Appl. Phys. Lett. 63 (9), 30 August 1993, pages 1164-1166
ON	AMM	A. Köck et al., "Strongly directional emission from AlGaAs/GaAs light-emitting diodes," Appl. Phys. Lett. 57 (22), 26 November 1990, pages 2327-2329
	ANN	
	AOO	

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Sheet 1 of 1

Substitute Form PTO-1449 (Modified) Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 16459-009001	Application No. 10/724,006
	Applicant Alexei A. Brchak et al.		
	Filing Date November 26, 2003	Group Art Unit 2681 2811	

U.S. Patent Documents							
Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
ON	AA	6,534,798 B1	03-2003	Scherer et al.			
ON	AB	6,522,063 B2	02-2003	Chen et al.			
ON	AC	2004/0027062	02-2004	Shiang et al.			
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